WPP Stakeholder Organizational Framework and Decision-Making Processes

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Texas Water Resources Institute

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Goals of the WPP

- Address impairments in Medina River & Medio Creek (eventual de-listing from 303d List)
- Address other watershed concerns
- Achieve consensus in WPP development
- Facilitate implementation support and participation

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Keys to a Developing Successful WPP

- Involve a diversity of interests
- Collaborative decision-making
  - Work to achieve joint goals and priorities
- Decision-making based on sound science and accurate information
- Build consensus around plan components
- Strong communication and outreach
- Short-term, doable action items and long-term objectives/goals

What is a Stakeholder

- A group or individual who:
  - Is concerned about the watershed
  - Assists with problem identification
  - Promotes awareness, education, and action
  - Has responsibility for implementing a decision
  - Facilitates implementation of solutions

Types of Stakeholders

Stakeholders can belong to the following groups/entities:

- Landowners
- County or regional representatives
- Local municipal representatives
- State and federal agencies
- Business and industry representatives
- Citizen groups
- Religious or community service organizations
- Universities, colleges, and schools
- Environmental and conservation groups
- Soil and water conservation districts

Stakeholder Tasks

- Provide guidance and input on potential pollutant sources and estimated pollutant loads
- Set plan goals and objectives
- Guide identification of measures that could be implemented to address bacteria and other concerns
- Identify needed outreach and education
- Oversee development of implementation plan & schedule

Today's Goals

- Overview potential organizational structures and decision-making approaches to facilitate WPP development
- Highlight roles of various groups
- Make recommendations for organization based on experience from other watersheds
- Solicit feedback on preferred organization and decision-making approach

Decision-Making Processes

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Importance of Decision-Making

- Decision-making process is critical to the development of the WPP
- Mechanisms used effect the efficiency of WPP development process
- Number of decision makers can have a significant influence
  - Too few won't reflect diversity of watershed interests
  - Too many can complicate/hinder discussions
- Decision-making process informs what is included in the WPP

Possible Decision-Making Processes

- Formal
  - Established bylaws that govern the actions of the committee
  - Adhere to Open Meeting Act Requirements
  - Formal voting of Coordination Committee

- Informal
  - Use ground rules to govern coordination committee and work groups
  - Strive to have most stakeholder groups represented in meetings
    - Will also seek feedback via email
  - Decision making via consensus building

Ground Rules Examples

- Geronimo Creek – More Formal
  - Goals
  - Powers
  - Timeframe
  - Membership Selection
  - Steering Committee
  - Workgroups
  - Technical advisory
  - Replacement/additions
  - Alternates
  - Decision making
  - Quorum
  - Facilitators
- Upper Gulf Coast Oyster Waters – Less Formal
  - No formal voting committee/representative
  - Speak up
  - Disagree respectfully
  - Silence is presumed consent
  - Listen during discussions
  - Respect opinions and don't criticize people
  - Be open to new ideas
  - Silence cell phones
  - Have fun

Other Examples

- Lake Granbury – Most Formal
  - By-Laws
  - Voting members
  - Goals
  - Powers
  - Timeframe
  - Membership Selection
  - Technical advisory
  - Replacement/additions
  - Alternates
  - Quorum
  - Facilitators

Pros and Cons

More Formal	More Informal
Pros - defined decision maker group; compels attendance to meet quorum - clear ground rules, roles and responsibilities	**Pros** - more flexibility - less likely to have delays - no quorum required - easier to make adjustments during planning process
Cons - potential for meeting delays if quorum not present - necessitates written ground rules that group must agree to – will take time to develop & approve	**Cons** - increased risk of poor participation - less clarity on how exactly group will function

Common Approach

- Somewhere between formal and informal
  - Follow ground rules and make decisions via consensus
  - Designated decision makers preferred but not required
    - Defined grouping for specific purposes: e.g. work groups
  - Quorum preferred but not required

Questions:

What decision making process do y'all prefer?

Formal, Informal, or a Hybrid?

WPP Stakeholder Group Framework

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Definitions & Roles

- **WPP Stakeholder Group** – The general body of individuals who participate in public meetings
  - Provide general feedback for the planning process
  - Review plan content

- **Coordination Committee** – Decision making body made up of stakeholders from diverse interests/backgrounds
  - Review work group recommendations, select what is included in WPP
  - Review WPP and provide specific comments

- **Workgroup** – Focused groups made up of stakeholders of a similar interest/background
  - Refine WPP inputs
  - Recommend actions to reduce pollutant loading

Common Groupings

- **Workgroup** – develop recommended content for the WPP
  - Focus on single source or source category: e.g. wastewater
  - Expected to be 3 – 4 meetings at most
    - Likely on a monthly basis for a short time period

- **Coordination Committee**
  - Expected to meet ~4 – 6 times over course of WPP development
    - Likely meet on a near quarterly schedule
    - Can be in conjunction with general stakeholder meetings
  - Meet when decisions need to be made
    - Content approval
    - Draft WPP overview and discussion
    - WPP review and discussion
    - WPP comments and revisions

Coordination Committee Overview

- Core group of watershed stakeholders
- Members equally representative of watershed stakeholders in the review of the WPP
- Facilitates active coordination amongst stakeholder interest groups:
  - Identify desired water quality condition and measurable goals
  - Prioritize programs and practices to achieve goals
  - Review and comment on WPP content during development
  - Communicate with interested parties in the watershed about the WPP

Prospective Coordination Committee Members

Counties: Atascosa, Bandera, Bexar, Medina

- Citizens
- County Extension Agents
- Soil and Water Conservation Districts
- County Judges or Commissioners
- Nueces River Authority
- USDA- Natural Resources Conservation Service
- Joint Base San Antonio
- City of Castroville, La Coste, San Antonio, Somerset
- Landowners
- Ag Producers
- County Health Inspectors or Designated Representatives (OSSFs)
- Subdivision or homeowner's association
- Local Groundwater Conservation Districts
- Local Industries
- Wastewater Treatment Plants
- City Public Works Department/Urban Planning Departments
- Universities/Conservation Groups
- Others

Work Group Overview

- Responsible for reviewing pollutant source estimates, recommending implementation strategies, goals and priorities to include in the WPP

- Each work group focuses on work group specific issues
  - Example: wastewater work group focuses on solutions related to *E. coli* loading from human wastewater only

- Work with project facilitator to draft and refine recommended WPP content specific to the work group

Possible Work Group Topics

- Agricultural Issues
- Development
- Education and Outreach
- Habitat/Wildlife
- On-Site Sewage/OSSF
- Ordinances and Planning
- Natural Resource Management
- Science and Monitoring
- Urban Storm Water
- Wastewater Infrastructure

Common Work Groups:

- Agricultural & Rural Concerns
- Development
- Urban Stormwater
- Wastewater & OSSFs

Typical Work Group Structure

- Members provide adequate representation from needed parties
  - Usually 6 – 10 workgroup members
- Have at least 2 work group members serve on Coordination Committee
  - Liaison to Coordination Committee that provides work group updates
- Adhere to same ground rules as Coordination Committee

Questions:

What stakeholder group structure do you prefer?

- General Stakeholder Group only?
- Coordination Committee?
- Working Groups?

What working groups are desired?

- Agricultural Issues
- Development
- Education and Outreach
- Habitat/Wildlife
- On-Site Sewage/OSSF
- Ordinances and Planning
- Natural Resource Management
- Science and Monitoring
- Urban Storm Water
- Wastewater Infrastructure

Common Work Groups:

- Agricultural & Rural Concerns
- Development
- Urban Stormwater
- Wastewater & OSSFs

Sign Up Now:

- passing sheets around to sign up for respective roles

Questions?

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Funding provided by the Texas State Soil and Water Conservation Board through a Clean Water Act Section 319(h) Grant from the U.S. Environmental Protection Agency.

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Medina Watershed Protection Plan – Water Quality

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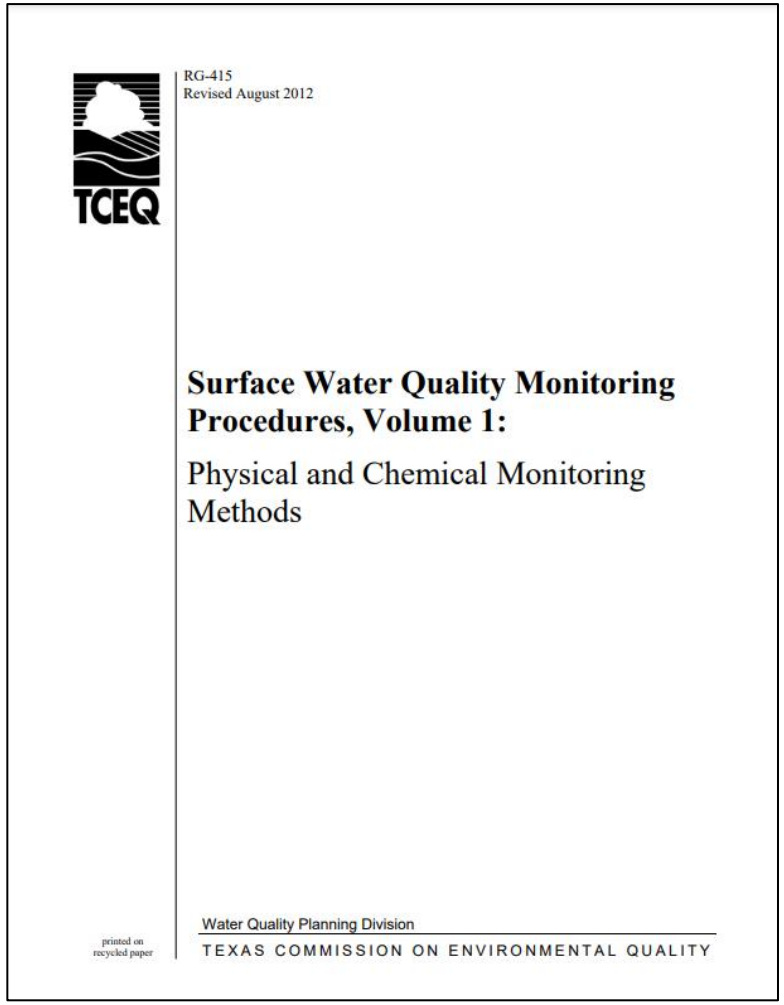
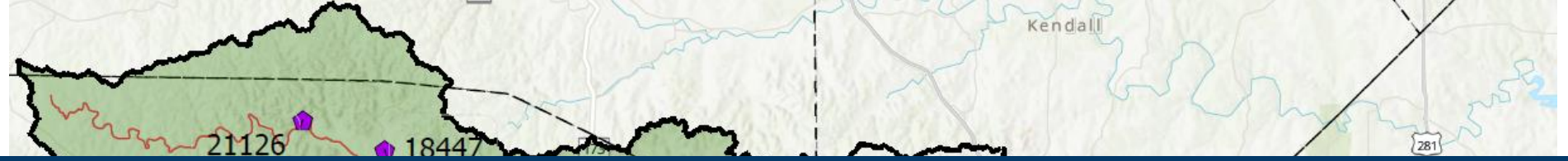
How we collect water quality…

- TCEQ regulates site selection and sampling procedures
- Sites should be representative of the river segment
- Conventional WQ parameters plus analytes of interest



How we assess water quality…

- 7-10 years of data assessed on a rolling average
- Coordinated Monitoring Process
- Impairments and Concerns are assigned to *assessment units*



Site Description	Station ID	Waterbody ID	Region	SE	CE	MT	24 hr DO	AqHab	Benthics	Nekton	Metal Water	Organic Water	Metal Sed	Organic Sed	Conv	Bacteria	Flow	Fish Tissue	Field	Comments
Segment 1903 Medina River Below Medina Diversion Lake | Map																				
MEDINA RIVER AT FM 1937 NEAR LOSOYA | Map	**12811**	1903	13	SA	SA	RT									6	6	6		6	Chlorophyll a, Pheophytin 6x/yr. Flow information will be reported from USGS gauge 08181500.
MEDINA RIVER AT APPLEWHITE ROAD APPROXIMATELY 1.16 KILOMETERS NORTH OF NEAL ROAD AT THE SOUTHERN BOUNDARY OF THE TOYOTA PROPERTY CAMS ID 0769 USGS SITE ID 08180850 | Map	**12814**	1903	13	SA	SA	RT									6	6	6		6	Chlorophyll a, Pheophytin 6x/yr.
MEDINA RIVER AT CR 2615 APPROX .5 MI DOWNSTREAM OF DIVERSION DAM NEAR RIO MEDINA | Map	**12824**	1903	13	SA	BA	RT									6	6	6		6	Chlorophyll a, Pheophytin 6x/yr.
MEDINA RIVER AT CR 484 | Map	**14200**	1903	13	SA	SA	BS	2	2	2	2										BS samples will be collected along with RT events
MEDINA RIVER AT CR 484 | Map	**14200**	1903	13	SA	SA	RT					2				6	6	6		6	Chlorophyll a, Pheophytin 6x/yr. Metals = total and dissolved.
CITY OF SAN ANTIONIO DOS RIOS WWTP DISCHARGE INTO MEDINA RIVER PERMIT WQ0010137-033 | Map	16584	1903	13	SA	SA	RT									6	6	6		6	
MEDINA RIVER 500 METERS DOWNSTREAM OF PLEASANTON ROAD IN BEXAR COUNTY | Map	**22225**	1903	13	SA	SA	RT									6	6	6		6	Chlorophyll a, Pheophytin 6x/yr.
Segment 1904 Medina Lake | Map																				
MEDINA LAKE AT MEDINA LAKE DAM WEST OF SAN ANTONIO | Map	**12825**	1904	13	SA	BA	RT									4	4			4	Chlorophyll a, Pheophytin 6x/yr.
MEDINA LAKE NEAR RED COVE | Map	12826	1904	13	SA	BA	RT									4	4			4	
MEDINA LAKE AT MORMON BLUFF | Map	12827	1904	13	SA	BA	RT									4	4			4	
MEDINA LAKE BETWEEN CYPRESS AND SPETTEL COVES | Map	12828	1904	13	SA	BA	RT									4	4			4	
MEDINA LAKE MID LAKE NEAR HEADWATER | Map	**12829**	1904	13	SA	BA	RT									4	4			4	Chlorophyll a, Pheophytin 6x/yr.
Segment 1905 Medina River Above Medina Lake | Map																				
MEDINA RIVER AT OLD ENGLISH CROSSING ABOVE BANDERA FALLS | Map	**12830**	1905	13	SA	BA	RT									4	4	4		4	
MEDINA RIVER AT FM 470 WEST OF BANDERA | Map	12832	1905	13	SA	BA	RT									4	4	4		4	
MEDINA RIVER AT SH 173 1.9 MI UPSTREAM FROM BANDERA CREEK 5.6 MI DOWNSTREAM FROM INDIAN CREEK | Map	13638	1905	13	SA	BA	RT									4	4	4		4	
MEDINA RIVER AT PATTERSON AVENUE IN MOFFETT PARK MEDINA TEXAS | Map	21125	1905	13	SA	BA	RT									4	4	4		4	
MEDINA RIVER AT NORTH SIDE OF MAYAN RANCH, WEST OF CITY OF BANDERA AND 2.16 KILOMETERS UPSTREAM OF SCHMIDTKE ROAD CROSSING | Map	**21631**	1905	13	SA	BA	RT									4	4	4		4	Chlorophyll a, Pheophytin 6x/yr.
MEDINA RIVER AT NORTH SIDE OF MAYAN RANCH, WEST OF CITY OF BANDERA AND 2.16 KILOMETERS UPSTREAM OF SCHMIDTKE ROAD CROSSING | Map	21631	1905	13	SA	SA	BS	2	2		2										BS samples will be collected along with RT events
NORTH PRONG MEDINA RIVER AKA WALLACE CREEK IMMEDIATELY UPSTREAM OF SH 16 | Map	**18447**	1905A	13	SA	BA	RT									4	4	4		4	Chlorophyll a, Pheophytin 6x/yr.
NORTH PRONG MEDINA RIVER AT FM 2107 APPROX 80 METERS NORTHEAST OF THE INTERSECTION OF BREWINGTON CREEK ROAD AND FM 2107 NORTHWEST OF MEDINA TEXAS | Map	21126	1905A	13	SA	BA	RT									4	4	4		4	
WEST PRONG MEDINA RIVER 11M UPSTREAM FROM COALKILN RD 3 KM WEST OF MEDINA AND IMMEDIATELY SOUTH OF SH337 | Map	15736	1905B	13	SA	BA	RT									4	4	4		4	

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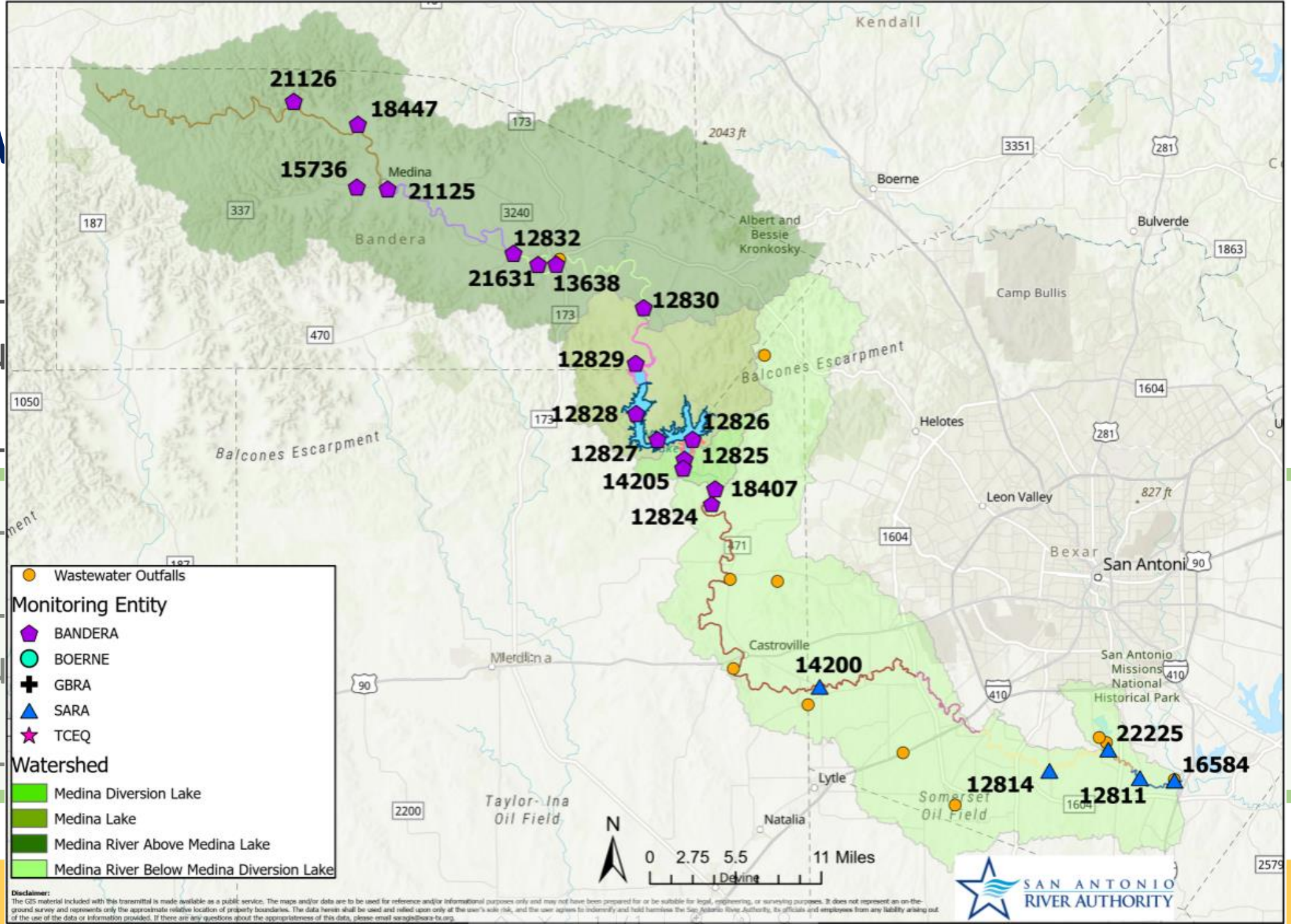
21126
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21125
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12824
14200
22225
16584
12814
12811
Bandera
Kendall
Boerne
Albert and Bessie Kronkosky
Bulverde
Camp Bullis
Helotes
Leon Valley
Bexar
San Antonio
Castroville
Lytle
Natalia
Somerset Oil Field
Taylor-Ina Oil Field
Balcones Escarpment
San Antonio Missions National Historical Park
2043 ft
827 ft
Wastewater Outfalls
Monitoring Entity
BANDERA
BOERNE
GBRA
SARA
TCEQ
Watershed
Medina Diversion Lake
Medina Lake
Medina River Above Medina Lake
Medina River Below Medina Diversion Lake
N
0 2.75 5.5 11 Miles
Delving
SAN ANTONIO RIVER AUTHORITY

Water Quality Concerns…

- 1903_03:
  - Nitrate – CS
  - E. coli – NS (256.94)
- 1903_04:
  - Nitrate - CS
- 1903_05:
  - None

Water Quality Concerns…

- Pooled stretches could have elevated bacteria.
- Are dry/low years negatively skewing assessed WQ data?

Water Quality Concerns…

Eliminating Critical Low-Flow Events on Perennial Streams

Provisions in §307.8(a) of the TSWQS specify applicability of standards under critical low-flow conditions. Critical low-flow is defined as the low-flow condition that consists of the 7Q2 or alternative low-flows for spring-fed streams. The 7Q2 is the lowest stream flow for seven consecutive days with a recurrence interval of two years, as statistically determined from historical data. Critical low-flows in springflow-

-TCEQ Guidance for Assessing and Reporting Surface Water Quality in Texas

Adjusting the Data…

- Created flow categories based on how they compared to historic flows at nearby gauges
- No Flow, Low (25%), Normal, High (75%)
- ***This is unofficial data***

USGS Gage Streamflow Statistics

Select Gage

- ○ Medina Rv at La Coste, TX
- ○ Medina Rv at Patterson Rd at Medina, TX
- ○ Medina Rv at San Antonio, TX
- ◉ Medina Rv nr Macdona, TX
- ○ Medina Rv nr Riomedina, TX
- ○ Medina Rv nr Somerset, TX
- ○ Olmos Ck at Dresden Dr, San Antonio, TX

Reset Filters

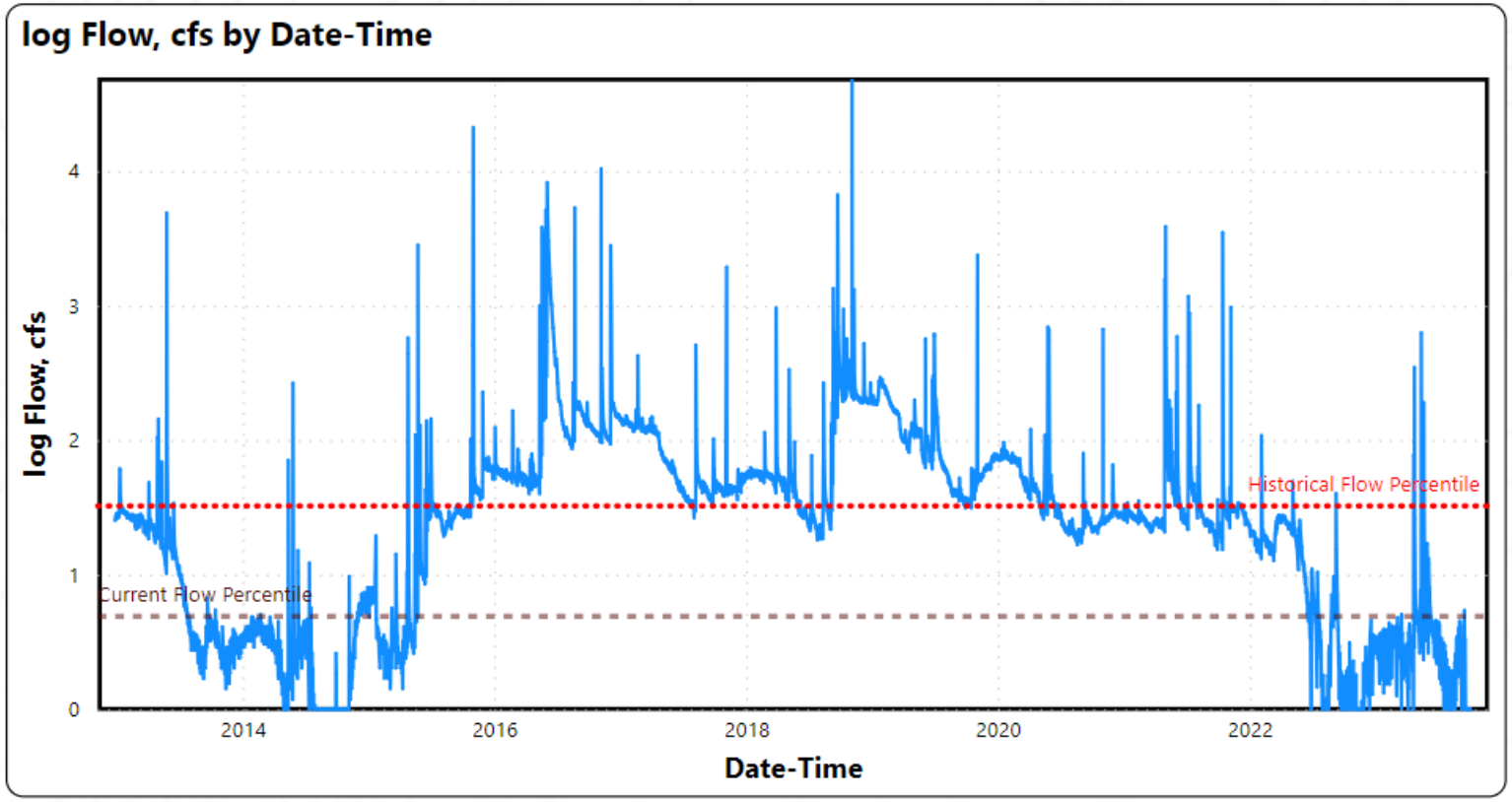
Earliest Available Date
12/2/1991

Select Date Range

12/27/2012 — 10/5/2023

Select Percentile

25%



25th Percentile

4.90

Flow (CFS)

Discharge Statistics

8,230.00	66.16	28.10	0.00
Max	Average	Median	Min

Select View

- Normal-Scale Graph
- Map

Looking at the Data…
1903-05

Adjusted Flow Category	e.coli MPN	geomean_all	%occurence
Dry	NA	NA	2.59
NoFlow	136.50	88.35	1.15
Low	184.27	110.95	22.13
Normal	158.21	112.47	46.84
High	668.99	148.70	27.30

Looking at the Data…
1903 only

Adjusted Flow Category	geomean
NoFlow	NA
Low	220.37
Normal	194.02
High	236.04

Questions?

Watershed Protection Plan Chapter Development

St. Louis Braden Keller Community Center

January 9, 2023

Jason Gerlich, Research Specialist

Texas A&M AgriLife, Texas Water Resources Institute

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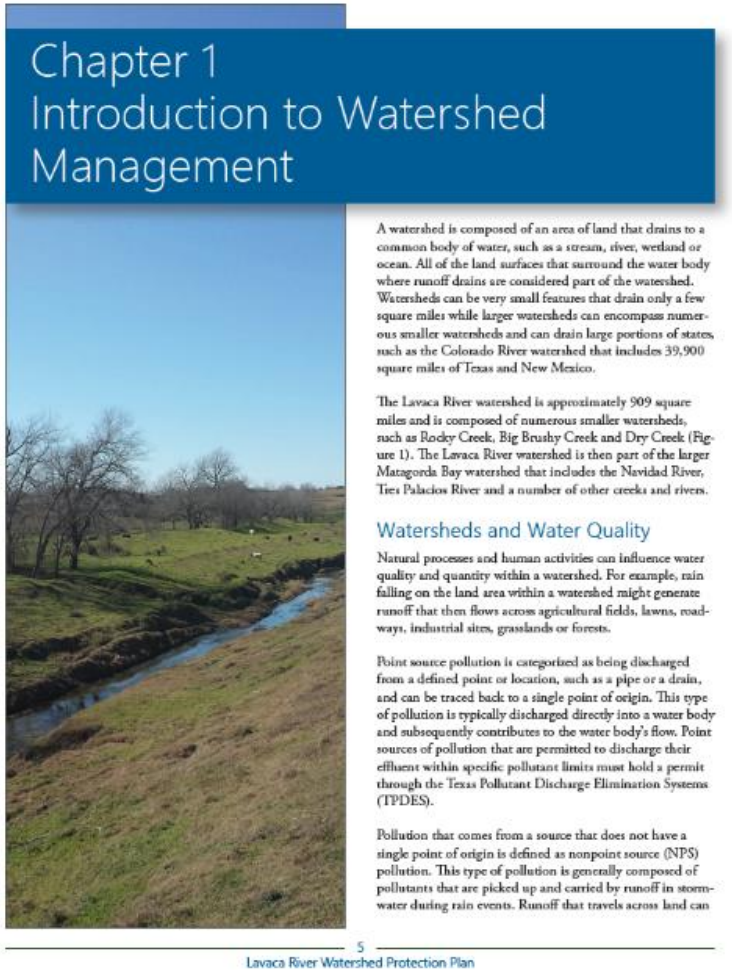
Water Quality – Example WPP

Chapter 1 – Introduction to Watershed Management

- Watersheds and Water Quality
- The Watershed Approach
- Watershed Protection Plan
- Adaptive Management
- Education and Outreach



Chapter 1
Introduction to Watershed Management

A watershed is composed of an area of land that drains to a common body of water, such as a stream, river, wetland or ocean. All of the land surfaces that surround the water body where runoff drains are considered part of the watershed. Watersheds can be very small features that drain only a few square miles while larger watersheds can encompass numerous smaller watersheds and can drain large portions of states, such as the Colorado River watershed that includes 39,900 square miles of Texas and New Mexico.

The Lavaca River watershed is approximately 909 square miles and is composed of numerous smaller watersheds, such as Rocky Creek, Big Brushy Creek and Dry Creek (Figure 1). The Lavaca River watershed is then part of the larger Matagorda Bay watershed that includes the Navidad River, Ties Palacios River and a number of other creeks and rivers.

Watersheds and Water Quality

Natural processes and human activities can influence water quality and quantity within a watershed. For example, rain falling on the land area within a watershed might generate runoff that then flows across agricultural fields, lawns, roadways, industrial sites, grasslands or forests.

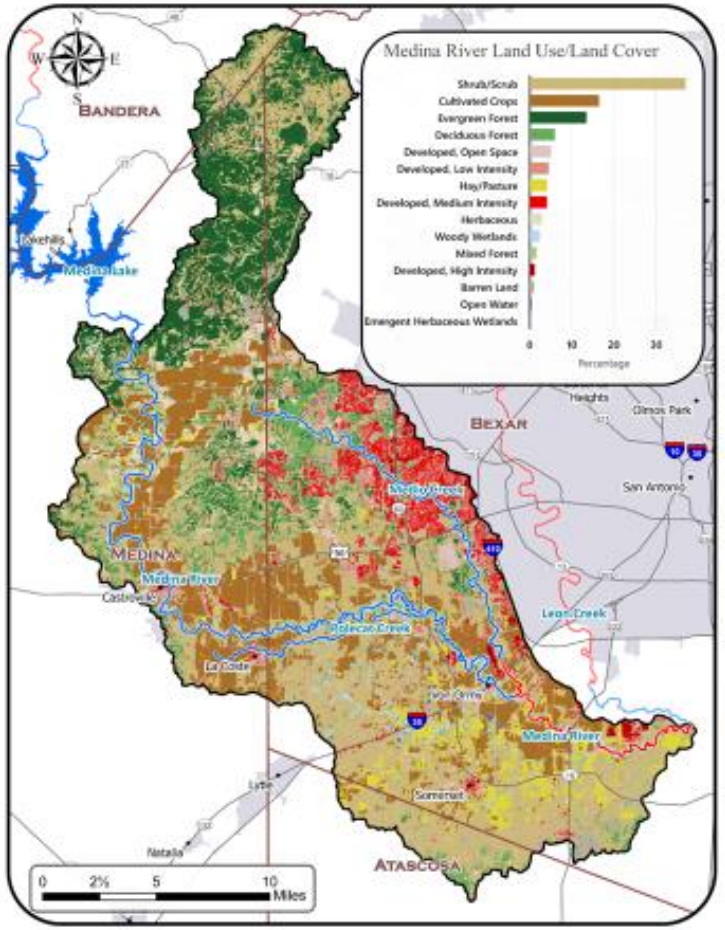
Point source pollution is categorized as being discharged from a defined point or location, such as a pipe or a drain, and can be traced back to a single point of origin. This type of pollution is typically discharged directly into a water body and subsequently contributes to the water body's flow. Point sources of pollution that are permitted to discharge their effluent within specific pollutant limits must hold a permit through the Texas Pollutant Discharge Elimination Systems (TPDES).

Pollution that comes from a source that does not have a single point of origin is defined as nonpoint source (NPS) pollution. This type of pollution is generally composed of pollutants that are picked up and carried by runoff in stormwater during rain events. Runoff that travels across land can

Chapter 2 – Watershed Description

- Watershed Description
- Soils and Topography
- Land Use and Management
- Climate
- Demographics

  - Averages calculated from May 11th , 1998 to May 11th , 2023.
  - Jan Min temp = 41° F
  - Aug Max temp = 98° F
  - Wettest months average around 3 inches and the driest month, Feb, averages 1.1 inches

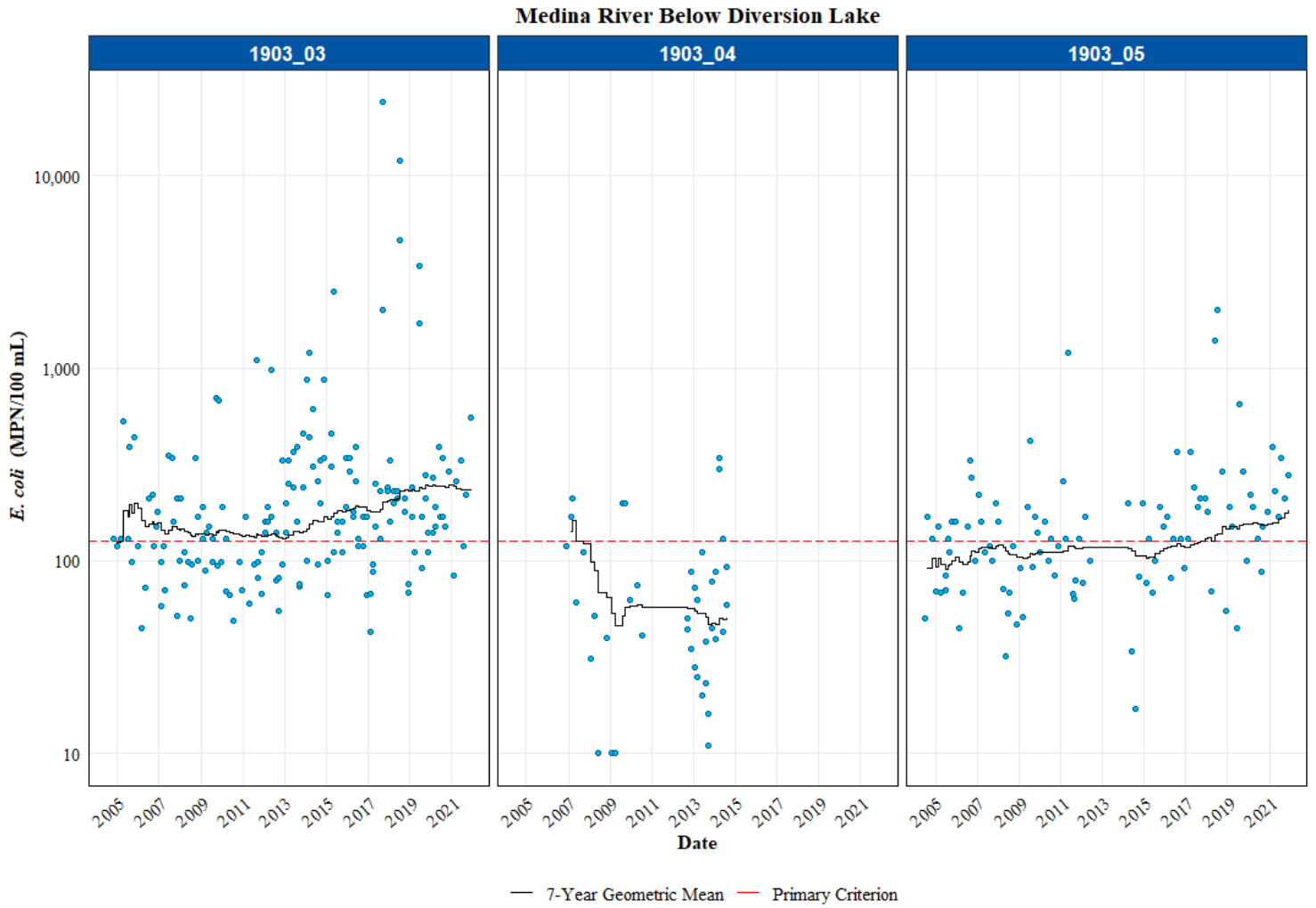


Land Use and Land Cover

2019 NLCD	Medina River Watershed	
Classification	**Sq Mi.**	**% Total Area**
Open Water	1.7	0.4%
Developed, Open Space	20.7	5.0%
Developed, Low Intensity	18.5	4.5%
Developed, Medium Intensity	16.9	4.1%
Developed, High Intensity	5.1	1.2%
Barren Land	3.8	0.9%
Deciduous Forest	24.5	5.9%
Evergreen Forest	55.4	13.4%
Mixed Forest	6.6	1.6%
Shrub/Scrub	152.4	36.9%
Grassland/Herbaceous	12.1	2.9%
Hay/Pasture	17.1	4.1%
Cultivated Crops	67.7	16.4%
Woody Wetlands	9.5	2.3%
Emergent Herbaceous Wetlands	0.6	0.1%
Total	**412.6**	**100%**

Chapter 3 – Water Quality

- Introduction
- Bacteria
- RUAA
- Dissolved Oxygen
- UAA
- Nutrients
- Flow
- Potential Sources of Water Quality Issues
- Water Quality Summary



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- Example Watershed

Chapter 4 – Pollutant Source Assessment

- Introduction
- Load Duration Curves
- Pollutant Source Load Estimates
- Load Reduction Summary

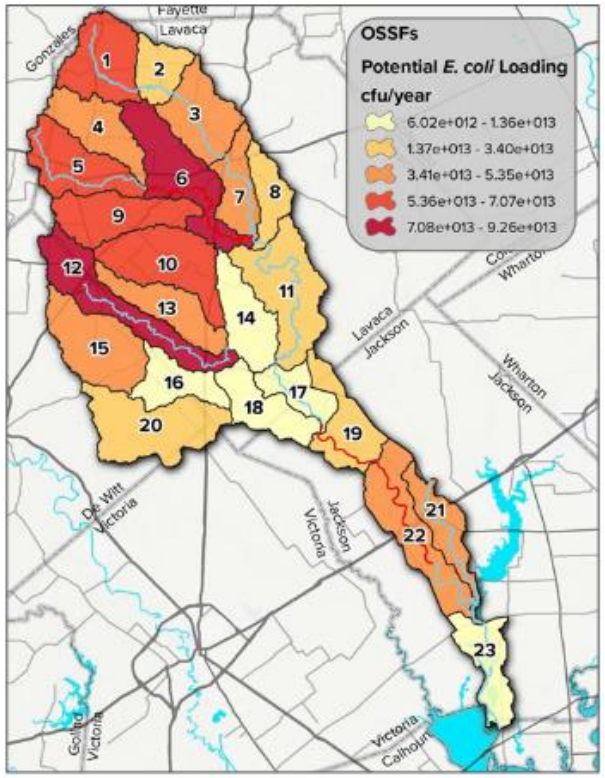

Figure 28. Potential annual bacteria loadings from OSSFs.

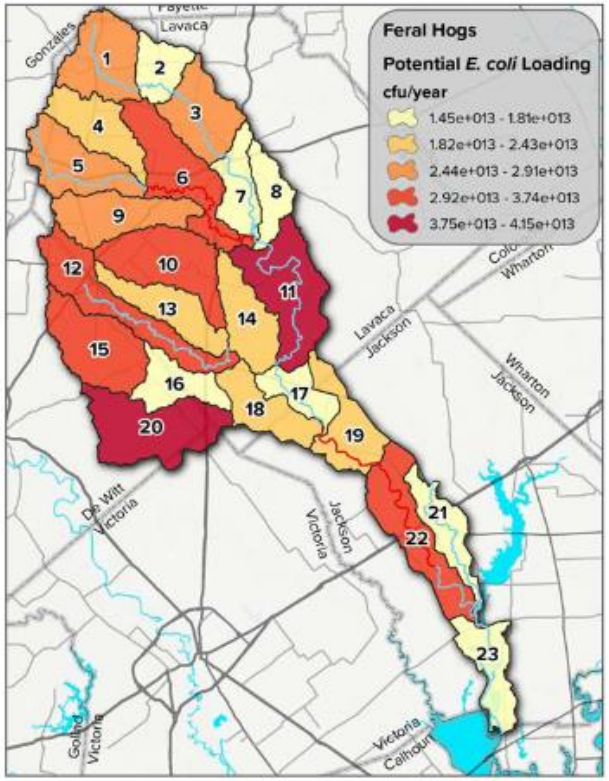

Figure 26. Potential annual bacteria loadings from feral hogs.

Sample Drop Off
Wednesday, February 7, 2024
8:30—10:00 a.m.
AgriLife Extension Office for Medina County
There is a **$15** per sample cost for screening

Pick up approved containers at the Medina County Extension Office

Educational Meeting
Thursday, February 8, 2024
8:00 a.m.—12:00 p.m.
St. Louis Braden Keller Community Center
1410 Amelia Street, Castroville

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Thank you

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https://medina.twri.tamu.edu/

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979-314-2352

Funding provided by the Texas State Soil and Water Conservation Board through a Clean Water Act Section 319(h) Grant from the U.S. Environmental Protection Agency.

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